



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,138	09/30/2003	Risto Olavi Harjula	7212.3001.002	5711

7590 06/20/2005

William J. Schramm  
Reising Ethington, Barnes, Kisselle, P.C.  
P.O. Box 4390  
Troy, MI 48099

EXAMINER

CINTINS, IVARS C

ART UNIT	PAPER NUMBER
----------	--------------

1724

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/675,138

Applicant(s)

HARJULA ET AL.

Examiner

Ivars C. Cintins

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-4,7,9,10 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4,7,9,10 and 17-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 1724

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bedard (U.S. Patent No. 5,858,243). Bedard discloses removing contaminant metal ions of the type recited (see col. 5, lines 29-32) from an aqueous stream (see col. 1, lines 14-15) with a crystalline silicate material (see col. 2, lines 49 and 53) containing niobium, tantalum, antimony or mixtures thereof (see col. 2, lines 59-61). This reference further suggests the ratio recited in claim 2, as well as the concentration recited in claims 3 and 4 (see col. 2, lines 61-63). Accordingly, this reference discloses the claimed invention with the exception of the exact ingredients selected to prepare the reference treatment material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select a combination of antimony with niobium or tantalum as constituent "M" in the reference material, since this reference clearly suggests such a mixture of elements (col. 2, lines 59-61); and upon such a selection being made, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a silicon compound, an antimony compound, and a compound of niobium or tantalum to prepare this reference material, since this reference material (i.e. crystalline silicate) clearly requires the presence of silicon, antimony and niobium or tantalum. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a conventional catalyst (acid) in the preparation of the above noted material, in order to facilitate its formation.


Art Unit: 1724

Claims 7, 9, 10, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bedard as applied above, and further in view of Dietz et al. (U.S. Patent No. 5,888,398). Bedard discloses the claimed invention with the exception of the recited pH for the aqueous stream, the removal of radioactive metal ions, and the presence of background ions in the stream undergoing treatment. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to treat a nuclear waste stream of the type recited (i.e. containing radioactive cesium and background ions such as sodium and calcium) having a pH of less than 7 by the process of Bedard (see col. 1, lines 14-15), since Dietz et al. teaches (see col. 1, lines 22-27) that such nuclear waste streams are typically acidic; and further teaches (see col. 6, lines 3-6) that such streams contain background ions such as sodium and calcium.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (571) 272-1155. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Duane Smith, can be reached at (571) 272-1166.

The centralized facsimile number for the USPTO is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Ivars C. Cintins**  
**Primary Examiner**  
**Art Unit 1724**

I. Cintins  
June 15, 2005